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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ROBINSON, ELIZABETH A

ART UNIT

PAPER NUMBER

1787

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,478	Applicant(s) TOMALIA ET AL.	
	Examiner Elizabeth Robinson	Art Unit 1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-9, 14-26, 28-31 and 33-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 13, 27, 32 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 12, 13, 27, 32 and 37-39 are currently being examined. It is noted that Applicant refers to a new claim 40 in the remarks in the first paragraph of Page 12. There was no claim 40 presented.

Information Disclosure Statement

The Examiner acknowledges that Applicant has submitted the requested World patent documents and the abstract of the Korean patent document. However, Applicant should provide a copy of the original Korean document to make the record complete, since the original IDS did not indicate that just an abstract was to be provided for this document. As previously stated, the Examiner did consider all documents listed in the IDS.

Specification

The amendment to the specification deleting priority to United States Provisional Application 60/488,909 is acknowledged.

Drawings

The drawings were received on January 13, 2010. These drawings are acceptable.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12, 13, 27, 32 and 37-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 12 adds the limitation that the photoluminescence is not quenched. The specification only shows a lack of quenching for the specific dendron of Example 21 and thus, is not commensurate in scope with the more broadly claimed dendron comprising any phosphine. Therefore, while there is support to recite that the photoluminescence is not quenched for a specific dendron, there is no support to recite such limitation with the broad disclosure of dendrons as disclosed in present claim 12. All other claims depend from claim 12 and thus, also fail to comply with the written description requirement.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12, 13, 27, 32 and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "without quenching the photoluminescence" in the last line. There is insufficient antecedent basis for this limitation in the claim. It is not stated what has photoluminescence, so there is no basis for claiming that it is not quenched. All other claims depend from claim 12 and thus, also are rendered indefinite.

Claim Rejections - 35 USC § 102

Claims 12, 13, 27, 32, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Vossmeier et al. (US 2003/0109056).

Regarding claims 12, 13, 27, 37 and 38, Vossmeier (Abstract) teaches a nanoparticle network in which the nanoparticles are interlinked by functionalized dendrimer molecules. The nanoparticles can be in a colloidal solution (Paragraph 119). The nanoparticles can be metal or semiconductors, including core shell structures such as CdS/CdSe (Paragraphs 59 and 60). The dendrimers can comprise phosphines (Table 1, Paragraph 36). Vossmeier (Paragraph 39) teaches that the valences of the structural units not involved in linking to the dendrimer structure can carry a small alkyl group such as a methyl or ethyl group. This meets the limitations of the R groups. The core of the dendrimer can further comprise any of the structural units of Table 1 in any

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combination. These include phenyl groups, methyl groups and ether groups (Paragraphs 36-39). Since it appears that the quenching of photoluminescence is based on the dendritic material and that Vossmeier teaches a phosphine dendritic structure, the quenching limitation would be met.

Regarding claim 32, Vossmeier (Abstract) teaches that the nanoparticles and dendrimers form a film that uptakes the analyte molecules. These analytes (Paragraph 130) include toluene and tetrachloroethylene which both have an odor and thus, can be considered to be fragrances.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Vossmeier et al. (US 2003/0109056).

As stated above, Vossmeier teaches a composition that meets the limitations of claims 12, 13 and 38. The core of the dendrimer can further comprise any of the structural units of Table 1 in any combination. These include phenyl groups, methyl groups, carbonyl groups and ether groups (Paragraphs 36-39) and thus, can form a benzoic acid connector.

While Vossmeier fails to exemplify the presently claimed dendritic core nor can the claimed dendritic core be “clearly envisaged” from Vossmeier as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed dendritic core and the dendritic core disclosed by Vossmeier absent a showing of criticality for the presently claimed dendritic core, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use core structural units which are both disclosed by Vossmeier and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

Response to Arguments

Applicant's arguments filed January 13, 2010 have been fully considered but they are not persuasive.

Applicant argues that Vossmeier et al. (US 2003/0109056) does not teach dendrons since the teachings are directed to dendrimers. However, as pointed out by Applicant, dendrons are portions of dendrimers and thus, the dendrimers comprise the dendrons as presently claimed.

In response to Applicant's argument that the references fail to show certain features of Applicant's invention, it is noted that the features upon which Applicant relies (i.e., that the focal point of the dendron is attached to the nanoparticle) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

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F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The attach point of the dendron is not claimed, merely that it attaches to the outer surface of the particle. Since the nanoparticles are interlinked by functionalized dendrimer molecules, the Examiner maintains that the dendritic structure of Vossmeier meets the limitations as presently claimed.

Applicant argues that the structures of Peng and Vossmeier must be different since an interference was not declared between the two patents. First, an interference is only declared when two applications claim (not just disclose) the same subject matter. Further, what is pertinent to the discussion of patentability in the instant case is whether the disclosed subject matter of Vossmeier meets the limitations of the claimed subject matter, not whether two prior art references disclose the same subject matter.

Due to amendments to claim 12 requiring particular phosphine linking groups, the rejections over Peng et al. (US 2004/0101976) from the December 15, 2009 Office Action are withdrawn. While Peng discloses phosphine linking groups in claim 12 and 23, the specific linking groups required are not taught or suggested. Thus, all arguments relating directly to the Peng reference are moot.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Robinson whose telephone number is (571)272-7129. The examiner can normally be reached on Monday- Friday 8 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. R./
Elizabeth Robinson
Examiner, Art Unit 1787

March 31, 2010

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1787